

IN THE CLAIMS

Please cancel Claims 1-17 without prejudice, and add the following additional claims.

18. An embryo specimen-culturing incubator assembly comprising:
- a) an embryo growth-supporting incubator, said incubator having a controlled internal atmosphere and having at least one specimen-supporting shelf containing a plurality of cup-shaped wells, said wells including transparent bottom walls;
 - b) a plurality of optically transparent Petrie dish embryo specimen containers positioned in said incubator wells supported by said bottom walls of said wells, said containers containing at least one embryo culturing fluid drop; and
 - c) embryo specimen growth-monitoring equipment associated with said incubator to visually monitor individual embryo specimen development in said container(s) through said bottom walls of said well(s) during an embryo specimen growth cycle, whereby individual embryo specimen development can be visually ascertained externally of the incubator without the need to remove the specimen container(s) from said incubator during said growth cycle, said growth-monitoring equipment including internal signal-producing optical imaging devices adjacent to said bottom walls of said well(s) in said incubator, and at least one external image signal-processing device outside of said incubator, which image signal-processing device converts signals from said imaging devices to visual images.
19. The assembly of Claim 18 wherein said bottom walls of said wells include a lens for optically magnifying the embryo specimens in the specimen containers.
20. The assembly of Claim 18 wherein said growth-monitoring equipment includes an internal audio signal-producing device adjacent to said container(s) in said incubator, and at least one external audio signal-processing device outside of said incubator, which audio signal-processing device is operable to record sounds emanating from specimens disposed in said specimen container(s).
21. The assembly of Claim 18 wherein said containers are rotatable in said wells and further including one or more driver(s) for selectively rotating said containers and said wells so as to selectively align embryo specimens in said containers with said optical imaging device.
22. The assembly of Claim 21 wherein there is a single optical imaging device adjacent to each of said container(s), said container(s) being sized to contain a plurality of embryo specimens, and said optical imaging device(s) being radially offset from an axis of said container(s), and wherein said driver(s) are operable to selectively and periodically align

individual embryo specimens disposed in said container(s) with said optical imaging device(s) during said growth cycle.

23. The assembly of Claim 18 wherein said optical imaging device(s) is (are) (a) CCD camera(s).

24. The assembly of Claim 18 further comprising incubator temperature and humidity controls and monitors.

25. The assembly of Claim 18 further comprising a system processor controller, a signal digitizer and a telephone line for transmitting digitized signals to remote locations and/or for receiving incubator control instructions from remote locations.

LISTING OF THE CLAIMS

1-17 (canceled)

18.(new) An embryo specimen-culturing incubator assembly comprising:

- a) an embryo growth-supporting incubator, said incubator having a controlled internal atmosphere and having at least one specimen-supporting shelf containing a plurality of cup-shaped wells, said wells including transparent bottom walls;
- b) a plurality of optically transparent Petrie dish embryo specimen containers positioned in said incubator wells supported by said bottom walls of said wells, said containers containing at least one embryo culturing fluid drop; and
- c) embryo specimen growth-monitoring equipment associated with said incubator to visually monitor individual embryo specimen development in said container(s) through said bottom walls of said well(s) during an embryo specimen growth cycle, whereby individual embryo specimen development can be visually ascertained externally of the incubator without the need to remove the specimen container(s) from said incubator during said growth cycle, said growth-monitoring equipment including internal signal-producing optical imaging devices adjacent to said bottom walls of said well(s) in said incubator, and at least one external image signal-processing device outside of said incubator, which image signal-processing device converts signals from said imaging devices to visual images.

19.(new) The assembly of Claim 18 wherein said bottom walls of said wells include a lens for optically magnifying the embryo specimens in the specimen containers.

20.(new) The assembly of Claim 18 wherein said growth-monitoring equipment includes an internal audio signal-producing device adjacent to said container(s) in said incubator, and at least one external audio signal-processing device outside of said incubator, which audio signal-processing device is operable to record sounds emanating from specimens disposed in said specimen container(s).

21.(new) The assembly of Claim 18 wherein said containers are rotatable in said wells and further including one or more driver(s) for selectively rotating said containers and said wells so as to selectively align embryo specimens in said containers with said optical imaging device.

22.(new) The assembly of Claim 21 wherein there is a single optical imaging device adjacent to each of said container(s), said container(s) being sized to contain a plurality of embryo specimens, and said optical imaging device(s) being radially offset from an axis of said container(s), and wherein said driver(s) are operable to selectively and periodically align individual embryo specimens disposed in said container(s) with said optical imaging

device(s) during said growth cycle.

23.(new) The assembly of Claim 18 wherein said optical imaging device(s) is (are) (a) CCD camera(s).

24.(new) The assembly of Claim 18 further comprising incubator temperature and humidity controls and monitors.

25.(new) The assembly of Claim 18 further comprising a system processor controller, a signal digitizer and a telephone line for transmitting digitized signals to remote locations and/or for receiving incubator control instructions from remote locations.